

Date: Sun, 3 Apr 94 04:30:13 PDT
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: Bulk
Subject: Ham-Ant Digest V94 #89
To: Ham-Ant

Ham-Ant Digest Sun, 3 Apr 94 Volume 94 : Issue 89

Today's Topics:

 AEA Hot Rot whip for HT
 Antenna stacking problems
 Attic Dipole
 CQ Article on HS-100
 CQ Article on TH11DX
 Discone vs 5/8 wave for 2m packet?
 How to base-feed half-wave vertical?
 Super-conducting antenna (LONG) (2 msgs)

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 3 Apr 94 02:33:08 GMT
From: dog.ee.lbl.gov!agate!usenet.ins.cwru.edu!odin!trier@ucbvax.berkeley.edu
Subject: AEA Hot Rot whip for HT
To: ham-ant@ucsd.edu

In article <ah301-290394073455@sy_j.pgh.wec.com>,
Jerry Sy <ah301@yfn.ysu.edu> wrote:
>I tested it on an swr meter and its swr is > 3, my rubber duck is < 1.5 !

You can tune it by adjusting the length, checking it on the meter until
you find something < 1.5. Scribe that length into the side of the antenna
so you can find it again without the meter.

BTW, there is usually no need to cross-post so widely. I've set followups
to just rec.radio.amateur.antenna.

Stephen

--

Stephen Trier KB8PWA "It don't mean a thing if it ain't got that
Other: trier@ins.cwru.edu certain je ne sais quois."
Home: sct@po.cwru.edu - Peter Schickele

Date: 2 Apr 1994 23:51:02 -0500
From: agate!howland.reston.ans.net!news.ans.net!hp81.prod.aol.net!
search01.news.aol.com!not-for-mail@ames.arpa
Subject: Antenna stacking problems
To: ham-ant@ucsd.edu

In article <1994Jan31.191526.18186@nosc.mil>, price@nosc.mil (James N. Price)
writes:

HI I HAD A TH3 AND KLM ROTATABLE 40 M DIPOLE AND 15 METER DID NOT WORK VERY
WELL ON THE TH3 UNTILL I MOVED THE 40 ANT 90 DEGREES AND IT WORKED GREAT AFTER
THAT... I THINK THAT THE ANTS WERE ABOUT 4 FEET APART ... 73 DE MIKE

Date: Fri, 1 Apr 1994 19:40:52 GMT
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!usenet.ins.cwru.edu!
news.csuohio.edu!vmcms.csuohio.edu!P1782@network.ucsd.edu
Subject: Attic Dipole
To: ham-ant@ucsd.edu

In article <hamilton.764817273@BIX.com>
hamilton@BIX.com (hamilton on BIX) writes:

>
>Troyce@bio.tamu.edu (Troyce) writes:
>
>>Living in a duplex, I can't put an outside antenna up, so I have been
>>considering designs involving hiding a dipole in the attic. I have about
>>50 feet of length to work with. Right now I am considering a trap dipole
>>for 10-80 meters, 82' long. This would entail running 50 feet straight

I have 4 indoor hf antennas in the rafters. You could make a good 20 meter dipole.

You may also want to consider making a loading coil, using a piece of pvc pipe as the core, for that 80 meter antenna. I picked up an article in one of the mags a year or 2 ago for an apartment 80 meter antenna. it uses one coil. I made it first tested it in the shack, and it was pretty good. It is now up in

the rafters and still performs.

3 years ago QST had an article on a portable back packers multiband dipole for 10-40 meters using 5 or 7 wire ribbon cable. It works ok, and can be cut for the WARC bands too.

My current antenna project is a 80 or 160 meter coiled dipole. I intend to coil the wire around a 3 or 3 1/2" pvc pipe(s) and hang it in the rafters. Alternatively, I just bought 2 slinky's to try as well, although I have not calculated their length yet.

Indoor antennas are fun to experiment with. They do not compare with an outdoor antenna, but that makes them no less fun.

Bob
kf8ph

Date: 2 Apr 94 21:58:04 GMT
From: dog.ee.lbl.gov!agate!news.Brown.EDU!noc.near.net!news.delphi.com!
usenet@ucbvax.berkeley.edu
Subject: CQ Article on HS-100
To: ham-ant@ucsd.edu

Here's a quote from W1ICP's review of the \$290 HS-100 mobile antenna in CQ, April '94 issue: "In my long career of working with antennas I have only seen a few that were completely tuned from the operating position. By tuned, I mean an antenna that is tuned to resonance so that all reactance in the antenna feedpoint is cancelled out at the antenna."

Doesn't the conjugate match provided by my antenna tuner cause maximum power transfer and tune the antenna system to resonance "so that all reactance in the antenna feedpoint is cancelled out at the antenna", (assuming near lossless transmission lines). The antenna tuner does not change the SWR on the transmission line but it does neutralize the reactance at the antenna feedpoint because the local conjugate match at the antenna tuner is transformed all the way to the antenna. Anywhere you look, up and down the transmission line, you see $-jX$ one direction and $+jX$ the other. As Maxwell said, "My Transmatch Really Does Tune My Antenna."

My \$15 Radio Shack CB whip covers 20m-10m with an antenna tuner.

73, Cecil, kg7bk@indirect.com

Date: 2 Apr 94 22:00:43 GMT
From: dog.ee.lbl.gov!agate!news.Brown.EDU!noc.near.net!news.delphi.com!
usenet@ucbvax.berkeley.edu
Subject: CQ Article on TH11DX
To: ham-ant@ucsd.edu

I'm looking at the review of the \$1000 Hy-Gain TH11DX beam in the April '94 CQ. My question is, why bother? Here's a comparison of the published gains vs what ELNEC says about my \$25 102 ft. CF Zepp, 30 ft. high.

Freq.	TH11DX Gain	CF Zepp Gain (ELNEC)
20m	8.6 dbi	6.8 dbi
17m	8.4 dbi	8.9 dbi
15m	8.1 dbi	10.9 dbi
12m	7.5 dbi	9.6 dbi
10m	9.2 dbi	10.1 dbi

My Zepp also works on 30m, 40m, and 75m and I don't need a tower or rotor.

73, Cecil, kg7bk@indirect.com

Date: 1 Apr 1994 21:38:08 -0800
From: ihnp4.ucsd.edu!library.ucla.edu!csulb.edu!nic-nac.CSU.net!ctp.org!not-for-mail@network.ucsd.edu
Subject: Discone vs 5/8 wave for 2m packet?
To: ham-ant@ucsd.edu

wrt@eskimo.com (Bill Turner) writes:

> 2 meter packet and said something you may want to consider. In his
> experience, most problems with connecting to the node are not caused by
> weak signals, but rather by multipathing. If that's the problem, a
> higher gain omnidirectional antenna will most likely make it worse
> instead of better. He recommended a beam. In his own personal case, he

It's almost a choice of two evils: struggle with the multipath and wait for a better time of day for a connection or add to the congestion on the

packet channel by creating a "hidden terminal" to other stations on the same frequency, which the beam will do.

--

Gary T. Lau

Internet: garlau@eis.calstate.edu or glau@ccmail.com

Amateur : N6MMM @ NOARY.#NOCAL.USA.NOAM

"I don't think the California State University or Lotus cc:Mail wants me to speak for them!"

Date: 1 Apr 1994 20:15:09 GMT

From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!usenet.ins.cwru.edu!eff!
news.kei.com!ssd.intel.com!chnews!scorpion.intel.com!jbromley@network.ucsd.edu

Subject: How to base-feed half-wave vertical?

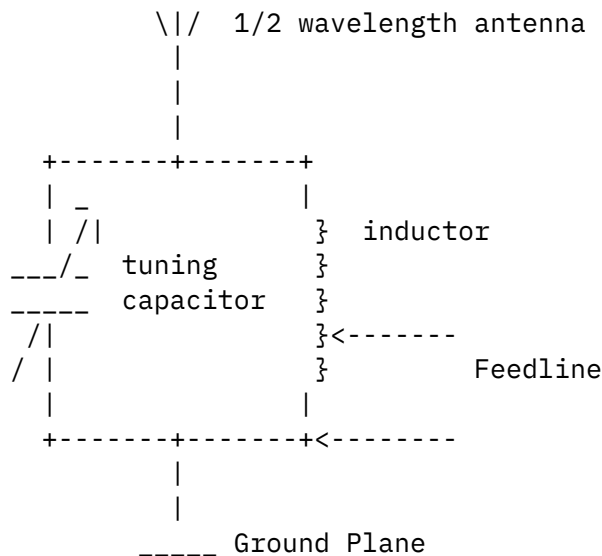
To: ham-ant@ucsd.edu

In article <1994Apr1.101526.1@tntvax>,

Richard Steck, 312-630-6622 <rs2@tntvax.nttrs.com> wrote:

>I'm looking for advice on the best way to match coax to the bottom of a
>half-wave vertical. Cushcraft does this for the multi-band R-5 with some type
>of a proprietary network consisting of toroids, etc. I only want to match a
>simple 20m half-wave vertical. I'd prefer not to do the match with a "J" type
>of feed. I'd prefer some type of a matching network.

An old-fashioned way to do this was with a parallel tuned circuit between the end of the antenna and a (small) ground plane. RF was coupled to the tuned circuit with small adjustable link or tapped up a few turns on the coil. Kind of like this (hokey ascii graphics):



-

>Please answer direct to:

>Richard Steck, W9RS
>Internet address: steck.richard@ntrs.com
>Phone: 312-630-6622

Sorry, this was too good for E-Mail alone, although I'll send it to you direct.

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| Jim Bromley W5GYJ | | |
| Intel Corp. m/s C11-91 | | This message transmitted with |
| 5000 W. Chandler Blvd. | | 100% recycled electrons. |
| Chandler,AZ 85226 | | |
| tel: 602-554-5183 | | Internet: jlbromley@sedona.intel.com |
+-----+-----+
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Date: Fri, 1 Apr 1994 19:25:52 GMT
From: ihnp4.ucsd.edu!library.ucla.edu!csulb.edu!csus.edu!netcom.com!
slay@network.ucsd.edu
Subject: Super-conducting antenna (LONG)
To: ham-ant@ucsd.edu

I recently received a letter from an old friend, Joe Speroni AH0A/7J1AAA, who has been living and working in Japan for many years. He is also the author of the well-known MORSE ACADEMY software for teaching Morse Code. Anyway, it was such an exciting letter that I thought it would be of interest to others here on "the Net".

Dear Sandy:

I had promised a series of articles on Japanese amateur radio, but there is something so exciting I just have to take a break and tell you about it.

It all started with the work that Ed Coan (AH6MI/7J1AAE) did on antenna pattern plotting using his personal computer. The circular, and even backward antenna patterns of some of our local TIARA club embers brought home the point that what a good station needs is a good antenna. Ed's antenna looks great and the results verify it. He works regular schedules into Colorado and Maine, just like sunspots don't mean anything. My mini-beam just could not compare.

Someone please tell me this story is fiction....

73
Matt Smith
KD4HME

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Internet: msmith@st6000.sct.edu          |  /\      /\      _-|_  _-|_
      matt.smith@swsbbs.com              |  |      /      /- \  |      |
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- PGP Public Key Available Via Finger - |  |  \_/\_/\  \_/\_/\  \_/\_/\  \_/\
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We reworked the wafers to put inductive coupling on them, but I could find no way to efficiently couple to it from the conducting ceramic material that passed RF but not heat. Probably, something that

Kyocera invented just for this use. I sent the TS-940 to the ham shop in Akihabara and asked them to touch it up for me. Suzuki-san (service manager at the ham shop) asked exactly how the paint had been peeled off around the coax connector -- lightning maybe? No, I assured him -- just low temperature exposure, without saying how low the temperatures were. The project had to stay secret and besides, Suzuki-san can repair anything!

Since it looked like it might be a while before the TS-930 would be repaired, I brought out my TS-940. I had already placed an order for the Yaesu FT-1000 anyway. After verifying that in the super-conducting range the antenna was resonant on 10 meters, we connected the TS-940. The ceramic material worked and the rig operated well even as we began the cooling cycle. The band seemed dead even with the antenna at -150 degrees C. It took another 10 minutes to get to the super-conducting range -- then the TS-940 blew up. It seems our antenna had a bit more gain than the TS-940 front-end could take. Later, with 100 dB of attenuation, measurements showed 5 volts coming out of the coax. A little hard to believe, but then what do I know about cryogenic LSI antenna technology?!

The TS-940 was also returned to Suzuki-san, but this time he frowned a bit -- the front-end board did look like it had been hit by lightning. Not to worry, Suzuki-san can repair anything!

The FT-1000 arrived just in time to be able to continue the experiments. We built a QSK attenuator to protect the receiver and with the LSI wafer antenna still inside the lab, decided to try to make a contact on 10 meters. Boy, what a shock when we got it working. The first thing we heard was a couple of W2's talking locally on 10 meters and that was with 80 dB of attenuation. We had the antenna array on a rotatable mount; I moved it about 1 degree and the W2's disappeared. What beam width! We tuned them in again, and they were just about to sign off, so we thought we would try to work them. The rig was tuned up at 50 watts on a dummy load; we switched in the wafer antenna and gave N2BA a call. The noise was unbelievable -- an ionized ray shot out from the antenna and hit the wall of the building. Before we knocked a hole in the band, we took out a piece of the lab wall! Ever wonder what an antenna pattern looks like in three dimensions? There was a small round hole in the wall of the lab -- about 1 cm in circumference. We cut power quickly. N2BA came back on frequency a few minutes later and said he was using his back-up rig; something had taken his main rig off the air. For some reason, the station he was talking to never came back, and so we decided not to transmit again until we knew for sure what was going on.

As near as we can tell, the antenna array has 120 dB gain over a dipole, but with a beamwidth of 0.75 degrees using the 60 dB points. With

50 watts output, the effective radiated power is 55 quadrillion watts at the center of the beam (5.5 with 13 zeroes). As soon as the University realized what we had built, the entire project was taken away from us and turned over to the Japanese Self-Defense Forces. Amateur radio "tinkering" has contribute to something, but I am not exactly sure what. I haven't the slightest idea what was in those wafers or how to explain how to build another set. But what I'd give to use a smaller set in the next CQ World Wide Contest! Do you think someone may be interested in this idea for Star Wars/SDI??

A few months later, the University contacted all of us and asked just how close we had been to the antenna when operating. As best as I can figure, we were in the null behind the array. From what has been said so far, it looks like a secondary use for our antenna may be as a mass sterilizer, but confirmation will have to await the results of the medical tests. If our antenna ever hits the market, it looks like remote operation would be desirable.

As I am writing this, I have been informed that Suzuki-san can't fix everything after all. He's written off the 930 and 940, and I just found out that before the university terminated the project, they tried one more time with my FT-1000, but without the 100 dB attenuator to protect the receiver. It's front-end now matches the 940's and it looks like it will be awhile before I am on the air again. Maybe Yaesu will announce some new models soon.

Best 73, Joe Speroni AH0A/7J1AAA, ex-Chief Engineer - TIARA
1 April 1994

This story has been reprinted and edited from the April 1992 issue of the Tokyo International Amateur Radio Association's newsletter. Permission is granted to reprint the material provided credit is given to both TIARA NEWS and the author - Joe Speroni, AH0A/7J1AAA.

Actually, Joe originally wrote the above back in 1985 and it has been updated by others since. Hope you enjoyed it.

73 de Sandy WA6BXH/7J1ABV slay@netcom.com 1 April 1994

End of Ham-Ant Digest V94 #89

